

4th Quarterly Report

Date of Report: *August 10, 2016*

Contract Number: DTPH5615T00014

Prepared for: *DOT PHMSA*

Project Title: "Use of Electromagnetic Sensors to Quantify Strength and Toughness in Steel Pipelines In and Out of Service"

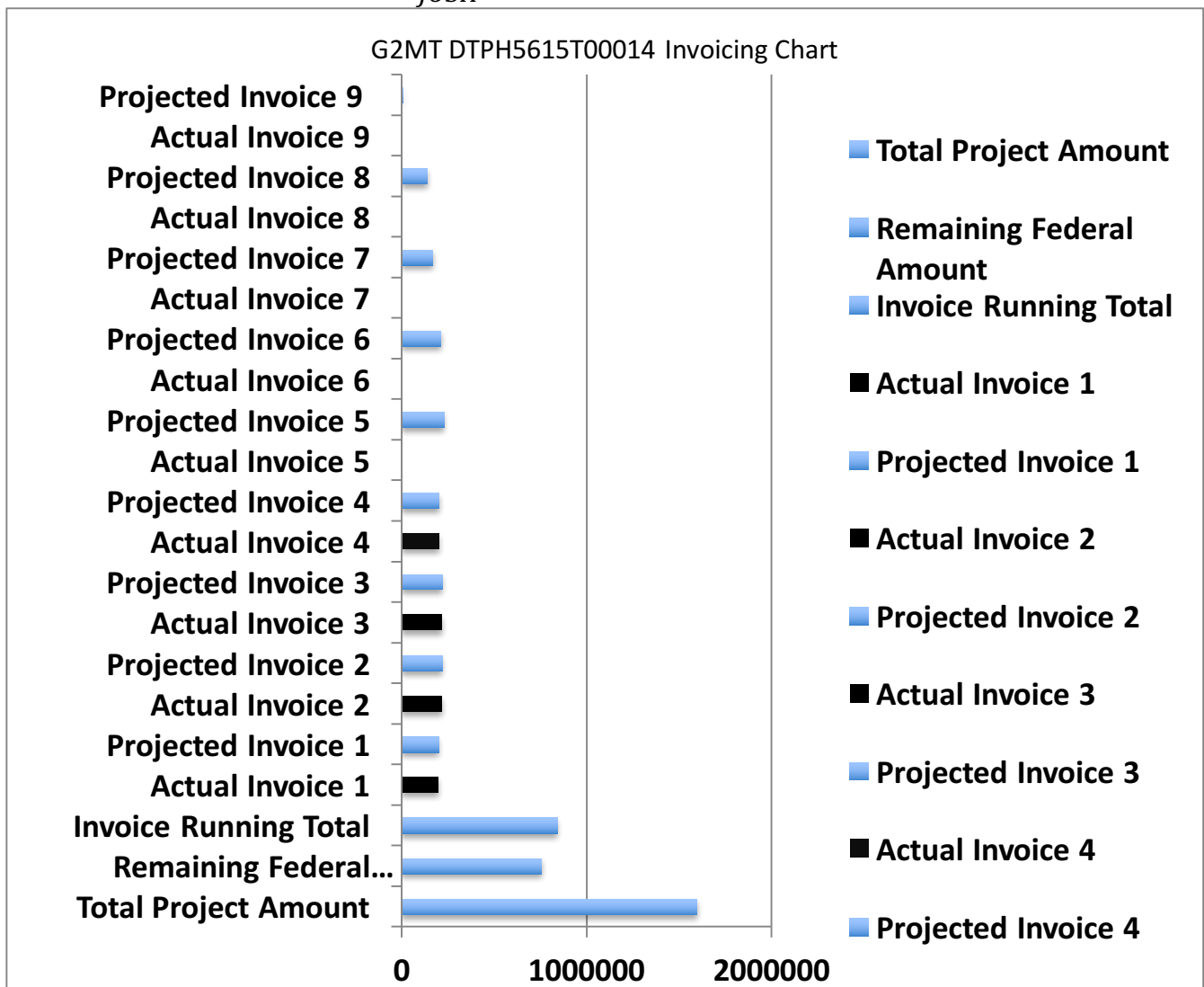
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For quarterly period ending: *August 10, 2016*

Funds and Work Completed During this Quarterly Period

JOSH



(a) Technical Status

The work performed during this fourth quarterly reporting period included Items 20 through 29 to perform Tasks 2, 3, 4, 5, 8, 9, 10, 11, 12, and 26 in Quarter 4. The tasks performed during this reporting period included: (1) Performing measurements on pipes in the field and laboratory and removing sections of pipe when possible to bring to G2MT for full metallurgical characterization, (2) Fully characterizing all vintage pipeline specimens that have not already undergone vigorous characterization, (3) Correlating the strength and toughness of the vintage pipe section in terms of the microstructural and fracture characteristics to evaluate both the brittle and ductile fracture behavior; Continued characterization of pipe samples from cost share partners, (4) Comparing and analyzing electromagnetic results and pipe metallurgical characterization results and determining the relationships between microstructure and mechanical properties, (5) Working on algorithm to quantify strength and toughness in vintage pipelines, (6) Performing calibrations to account for expected variables, (7) Developing the calibration codes for variables from Task 7, (8) Performing laboratory and field measurements, (9) Modifying the algorithms as needed to improve accuracy, and (10) Providing the 4th quarterly report.

(b) Business Status

During this fourth quarterly reporting period, G2MT has accomplished the fourth group of interim milestones and the quarterly (interim) reporting is on track according to the budgeted expenditures. The total amount of cost-sharing for this period was \$840,000. The proposed budgeting for the first interim periods was \$204,400 and the actual expenditures for each period have equaled the budgeted amounts.

(c) Payable Milestones

The invoice associated with this quarter includes the budgeted \$204,400 payable for the 4th interim report period. The remaining funds following payment of the 4th invoice will be sufficient to complete the proposed testing and demonstration period on or ahead of the schedule described in the project proposal.